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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/736,747	12/17/2003	Takafumi Hamano	P24715	5606
7055	7590	09/07/2005	EXAMINER	
GREENBLUM & BERNSTEIN, P.L.C. 1950 ROLAND CLARKE PLACE RESTON, VA 20191			PAK, SUNG H	
			ART UNIT	PAPER NUMBER
			2874	

DATE MAILED: 09/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

<b>Office Action Summary</b>	<b>Application No.</b> 10/736,747	<b>Applicant(s)</b> HAMANO ET AL.	
	<b>Examiner</b> Sung H. Pak	<b>Art Unit</b> 2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 June 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-82 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-82 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/17/04, 10/28/04</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

Information disclosure statements filed 3/17/2004 and 10/28/2004 have been considered.

### ***Election/Restrictions***

Applicants' traversal of restriction requirement had been carefully studied. Applicants' arguments are found persuasive and the restriction requirement is hereby withdrawn.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-11, 13-15, 30-31, 33-40, 42-82 are rejected under 35 U.S.C. 102(b) as being anticipated by Kawase (US 6,472,817 B1).

Kawase discloses an optical device with all the limitations set forth in the claims, including: a light source comprising a light emitting unit including a light emitting layer for electrically emitting a light ('6' in Fig. 6); a waveguide for emitting a light irradiated from the light emitting unit into air through a light take-out surface formed on an end face (See arrow Fig. 6); wherein an area of the light take-out surface of the waveguide is set to

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be smaller than that of the light emitting layer (Fig. 6); wherein the light emitting unit is formed on a side surface of the waveguide (Fig. 6); wherein a direction of a light propagation of the waveguide is different from a direction of a normal of the light emitting layer (Fig. 6); wherein the light emitting unit is optically coupled to the waveguide without an air layer provided therebetween (Fig. 6); wherein the waveguide has a lower refractive index than that of the light emitting layer (column 4 lines 50-57); wherein the waveguide has a refractive index which is higher than a refractive index obtained by subtracting 0.3 from the value of the refractive index of the light emitting layer (column 4 lines 50-57); wherein in the waveguide layer and light emitting layer may comprise polymer material (column 1 lines 23-38); wherein the waveguide is provided with an angle converting layer ('24' Bragg reflector); converting the angle of the light transmitted thereon; wherein the waveguide includes a core having a predetermined refractive index and a clad formed on an outer periphery of the core and having a lower refractive index than the refractive index of the core, and the angle converting structure for converting an angle of a light is formed on an interface between the core and the clad on an opposite side to the light emitting layer (Figs. 8(c) and 9); wherein the light emitting layer is formed on two surfaces or more other than the light take out surface of the waveguide (Fig. 10); wherein the waveguide is provided with a reflecting plane on an opposed surface to the light take-out surface (Fig. 5- reflecting surface on both sides); wherein the light emitting unit is an organic electroluminescence element (i.e. OLED- abstract); a parallel light illuminating apparatus using such a light source (Fig. 12); wherein the light emitting unit includes an anode and cathode electrodes

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('2', '4' Fig. 6); a photosensitive member capable of forming a latent image by irradiation of the signal light (column 5 lines 49-50).

Regarding claim 34, Kawase inherently discloses and fully anticipates the claimed toner sticking means and toner transferring means since Kawase explicitly discloses that its light source/ exposing apparatus is to be used in a printer device (column 5 lines 49-50).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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Claims 12, 16-21, 23-25, 27-29, 32, 41, are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawase (US 6,472,817 B1) in view of Murao (US 2003/0030717 A1).

Regarding claims 12, 16-21, 23-25, 27-29, Kawase discloses an optical device with limitations set forth in the claims as discussed above, except it does not explicitly teach the waveguide having its size gradually decreased from the light incidence plane toward the light emitting plane.

Murao, on the other hand, explicitly teaches a light-emitting layer coupled to a waveguide structure that has its size gradually decreasing from the light incidence plane toward the light emitting plane (Fig. 1-3). Such feature is considered advantageous and desirable in the art because it allows for more high power and high intensity optical output. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the device of Kawase to have a waveguide structure that decreases in size from the light incidence plane toward the light emitting plane as taught by Murao.

Regarding claims 32, 41, Kawase discloses an optical device with limitations set forth in the claims as discussed above, except it does not explicitly teach the use of light shielding layer. Murao, on the other hand, explicitly teach the use of light shield layer (paragraph 0034). Such element is considered advantageous and desirable in the art because it prevents crosstalk of light between adjacent light emitting element and improves the performance of the optical device. Therefore, it would have been obvious

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to a person of ordinary skill in the art at the time the invention was made to modify the device of Kawase to have a light shielding layer as taught by Murao.

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawase (US 6,472,817 B1) in view of JP '553 (JP 2003-168553).

Kawase discloses an optical device with limitations set forth in the claims as discussed above, except it does not explicitly teach the use of saw-toothed angle converting structure.

On the other hand JP'553 explicitly teach the use of saw-toothed angle converting structure (Fig. 1). Such feature is considered advantageous and desirable in the art because it allows for accurate and precise control of light propagating by controlling the angle of inclination on the saw-tooth structure. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the device of Kawase to have saw-tooth structure of JP'553.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 2005/0151824 A1 discloses image forming and exposure device.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sung H. Pak whose telephone number is (571) 272-2353. The examiner can normally be reached on Monday- Friday, 9AM-5PM.

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The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sung H. Pak  
Patent Examiner  
Art Unit 2874

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